

## ABSTRACT

Methods are described using a particular type of assay system, the Multi-Pathway High Throughput Assay, in conjunction with a novel experimental strategy, whereby repeated cycles of experiments result in the identification of the most effective synergistic combinations of potential active agents from a library of materials. The novel experimental strategy not only requires far fewer total experiments than would be required using conventional discovery strategies but also maximizes the probability of finding highly synergistic combinations through the principle of multiple-pathway intervention.